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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,987	10/21/2005	Andreas Cedergren	P16869-US2	2844
27045	7590	02/20/2008		
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			EXAMINER LIU, BEN H	
			ART UNIT	PAPER NUMBER
			2616	
			MAIL DATE	DELIVERY MODE
			02/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,987	Applicant(s) CEDERGREN ET AL.	
	Examiner Ben H. Liu	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on October 21st, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 5 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>February 9th, 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 5 and 10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, claims 5 and 10 not been further treated on the merits.
2. Claims 1-10 are objected to because of the following informalities: the phrase "characterized in" does not positively recite the limitations. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4 and 5-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Yaguchi (U.S. Patent 6,980,584) in view of Subrahmanya (U.S. Patent 6,807,429).

For claims 1 and 6, Yaguchi discloses a method of receiving coded digital data symbols sent from a transmitter through a transmission channel of a communications network, the method comprising the steps of: calculating an estimate (y) of a sent data symbol, said estimate being represented by a first number (a+b) of bits (*see column 3 lines 62-64, which recite estimated data symbols*); selecting from said calculated estimate a second number (c) of bits, said second number (c) being lower than said first number (a+b), to achieve a rounded estimate (y') being represented by said second number (c) of bits (*see column 4 lines 1-9, which recite a switch 112 that selects one of the estimated symbol based upon the output of the comparator 111*) ; and decoding the rounded estimate (y') to achieve a decoded data symbol, characterized in that the method further comprises the steps of: receiving from said network a target value for a bit error rate of the transmission channel and selecting said second number of bits in dependence on said target block error rate value (*see column 4 lines 1-9, which recite selecting one of the estimated symbols based upon the bit error value to send to the decoder 114*).

Yaguchi discloses all the subject matter of the claimed invention with the exception that Yaguchi discloses selecting the estimated symbol values based on bit error rate (BER) measurements instead of block error rate (BLER) measurements. Subrahmanya from the same or similar fields of endeavor discloses a wireless system that derives estimated soft-decision symbols (*see column 2 lines 59-63*). The system measures transmission performance by measuring bit error rates, block error rates and other similar measurements (*see column 5 lines 33-35*). Thus, it would have been obvious to the person of ordinary skill in the art at the time of

the invention to use block error rate measurements as taught by Subrahmanya instead of using bit error rates to select estimated symbol values as taught by Yaguchi. Measuring block error rates as taught by Subrahmanya can be implemented by modifying the comparator to compare block error rate values instead of bit error rate values as taught by Yaguchi. The motivation for using block error rate measurements instead of bit error rate measurements is to measure performance at the block level instead of the bit level.

For claims 2 and 7, Yaguchi discloses all the subject matter of the claimed invention with the exception that the step of selecting said second number of bits comprises the steps of multiplying said estimate (y) by a scaling factor and truncating a number of bits from said multiplied estimate (y_{sc}). Subrahmanya from the same or similar fields of endeavor discloses a wireless system that derives estimated soft-decision symbols that are multiplied by scaling factors (*see column 2 lines 59-65*). The scaled symbols are combined to provide a decision metric (*see column 3 lines 12-17*). In order for the scaled symbols to be compatible with each other and the original symbols in the decision metric, they must be truncated to their original bit lengths. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to scale and truncate the soft-decision symbols as taught by Subrahmanya with the method of receiving coded digital data symbols as taught by Yaguchi. Scaling and truncating the soft-decision symbols as taught by Subrahmanya can be implemented by configuring the multiplier 102 and 107 as taught by Yaguchi to multiply the received symbols by a scaling factor. The motivation for scaling and truncating the soft-decision symbols with the method of receiving coded digital data symbols is to give different importance weights to different estimated symbols.

For claims 3 and 8, Yaguchi discloses all the subject matter of the claimed invention with the exception that said scaling factor has the form 2^n , where n is an integer. However, Subrahmanya from the same or similar fields of endeavor discloses a wireless system that derives estimated soft-decision symbols that are multiplied by scaling factors (*see column 2 lines 59-65*). Using a scaling factor of the form 2^n , where n is an integer is a design choice that can be used in the system disclosed by Subrahmanya. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the scaling factor of the form 2^n with the method of receiving coded digital data symbols that are scaled as taught by Yaguchi and Subrahmanya. The scaling factor of the form 2^n can be implemented by selecting a scaling factor of that form in the method of receiving coded digital data symbols that are scaled as taught by Yaguchi and Subrahmanya. The motivation for using that form of the scaling factor is to enable shifting of the binary values in a bit stream representing the symbols.

For claims 4 and 9, Yaguchi discloses all the subject matter of the claimed invention with the exception that the method further comprises the step of selecting said scaling factor from a stored table comprising corresponding values of said target block error rate and said scaling factor. Subrahmanya from the same or similar fields of endeavor discloses a wireless system that derives estimated soft-decision symbols that are multiplied by scaling factors (*see column 2 lines 59-65*). The scaled symbols are combined to provide a decision metric (*see column 3 lines 12-17*). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to generate a decision metric containing scaled symbols as taught by Subrahmanya with the method of receiving coded digital data symbols as taught by Yaguchi. The decision metric containing scaled symbols as taught by Subrahmanya can be implemented by configuring

the method of receiving coded digital data symbols that are scaled as taught by Yaguchi and Subrahmanya to store the scaled symbols in a metric. The motivation for using the decision metric containing scaled symbols as taught by Subrahmanya with the method of receiving coded digital data symbols that are scaled as taught by Yaguchi and Subrahmanya to store the scaled symbols in a metric is to allow the system to make performance decisions based upon scaled symbol values.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (*see form PTO-892*).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben H. Liu whose telephone number is (571) 270-3118. The examiner can normally be reached on 9:00AM to 6:30PM.

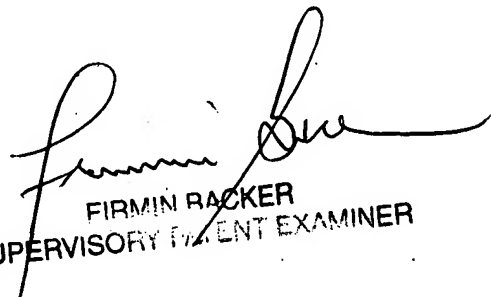
. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571) 272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BL


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